

### **LISTING OF CLAIMS**

This Listing of Claims will replace all prior versions, and listings, of claims in the application.

Claim 1. (Original) A tissue-compatible polymer composite comprising a co-continuous, integrated multi-phase, three-dimensional microstructured network of two or more immiscible biocompatible polymers.

Claim 2. (Original) The polymer composite of claim 1, wherein, at least one polymer component of the composite is bioerodible, and erodes at a rate faster than at least one other polymer component of the composite.

Claim 3. (Original) The polymer composite of claim 1, consisting essentially of first and second polymer components.

Claim 4. (Original) The polymer composite of claim 3, wherein said second polymer component is bioerodible.

Claim 5. (Original) The polymer composite of claim 4, wherein said first polymer component is bioerodible and erodes at a rate slower than said second polymer component.

Claim 6. (Original) The polymer composite of claim 3, wherein the weight ratio of the first component to the second component is between about 15:85 and 85:15.

Claim 7. (Original) The polymer composite of claim 4, wherein said first polymer component is PMMA and said second polymer component is selected from the group consisting of PLA, PGA and copolymers thereof.

Claim 8. (Original) The polymer composite of claim 2, comprising PMMA and at least one polymer selected from the group consisting of PLA, PGA and copolymers thereof.

Claim 9. (Original) The polymer composite of claim 1, wherein at least one polymer phase comprises one or more substances or particles that promote bone or tissue ingrowth.

Claim 10. (Original) The polymer composite of claim 9, wherein at least one polymer phase comprises particles of hydroxyapatite or tricalcium phosphate.

Claim 11. (Original) The polymer composite of claim 1, wherein at least one polymer phase comprises one or more nutrient or pharmaceutical substances.

Claim 12. (Original) The polymer composite of claim 1, wherein at least one polymer phase is foamed.

Claims 13 – 20. (Cancelled)

Claim 21. (Withdrawn) An implantable medical device or tissue scaffold formed from the composite of claim 1, 2, 3, 4, 7, 8, 9, 10 or 11.

Claim 22. (Cancelled)

Claim 23. (Withdrawn) A method of regulating cellular attachment, migration and proliferation on a polymeric substrate, comprising contacting living cells, tissues or biological fluids containing living cells with the polymer composites of claim 1.